



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,738	07/15/2003	Jae Ho Hwang	0465-1026P	7258
2292	7590	05/16/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			HECKENBERG JR, DONALD H	
			ART UNIT	PAPER NUMBER

1722

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/618,738

Applicant(s)

HWANG, JAE HO

Examiner

Donald Heckenberg

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 9-11 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-9 is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 12 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1722

1. Applicant's election of Group I (claims 1-8 and 12) in the reply filed on 21 February 2006 is acknowledged. Because Applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse. MPEP § 818.03(a).

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Howarth, Jr. (U.S. Pat. No. 4,642,086).

Howarth discloses an apparatus for forming flexible fold lines in a thermoplastic sheet. The apparatus comprises a heating plate (12) and a stamper (14) provided under the heating plate (see Fig. 1). A plurality of pyramid-shaped cutting tools (18) extend from the lower side of the stamper at fixed intervals for forming a plurality of groove patterns in the surface of the material to be worked upon (see Figs. 1 & 2). As noted at cl. 3, ll. 38-40, the tools are made to move toward the material to be worked. Thus, the apparatus must inherently have

Art Unit: 1722

some tool structure reciprocating tool unit for moving the cutting tools into and away from the material being worked.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Howarth.

Howarth discloses the apparatus as described above.

Howarth does not explicitly disclose the stamper to be a metal

Art Unit: 1722

plate. However, the use of metallic materials for construction of apparatus components like that disclosed by Howarth is well known. Moreover, given the operating conditions of the apparatus, metallic materials would have been a natural choice for one practicing the art. For example, metals would be able to withstand the heating temperatures generated in the apparatus during operation without breaking or melting (see cl. 2, ll. 60-66 disclosing operating temperatures). Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have use a metal material for the stamper plate construction in the apparatus disclosed by Howarth because metallic materials would be a natural choice that would be able to withstand the apparatus operating conditions.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Howarth in view of Olson (U.S. Pat. No. 5,635,256).

Howarth discloses the device for forming a groove pattern as described above. Howarth does not disclose the cutting part to be made of a processed diamond material. The use of diamond materials, however, for cutting tools is well known. Olson, for example, suggests the use of diamond coatings for cutting tools in order to improve resistance to wear (cl. 1, ll. 16-23).

Art Unit: 1722

Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have modified the apparatus disclosed by Howarth as such to have included a processed diamond material on the cutting parts because diamond materials are known to improve resistance to wear of cutting tools as suggested by Olson.

8. Claims 6-9 are allowed.

9. Claims 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest a device for forming a groove pattern as recited in claims 2 and 6-9.

The closest prior art disclosed by Howarth is described above. Howarth fails to teach or suggest a holder having a vacuum structure. Moreover, given Howarth's disclosure of the holding frame (26) having groove structures (see cl. 3, ll. 1-

Art Unit: 1722

22), it does not appear that a vacuum holding frame could be used with the device. Howarth also fails to teach or suggest a heating nipper surrounding both sides of the heating plate and the stamper as recited in claim 6.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald Heckenberg whose telephone number is (571) 272-1131. The examiner can normally be reached on Monday through Friday from 9:30 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta, can be reached at (571) 272-1316. The official fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<<http://pair-direct.uspto.gov>>>. Should you have questions

Application/Control Number: 10/618,738

Page 7

Art Unit: 1722

on access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at (866) 217-9197 (toll-free).

 5-15-6  
Donald Beckenberg  
Primary Examiner  
A.U. 1722